

## IN THE CLAIMS

Please cancel claims 5, 7, and 9.

Please amend the claims as follows:

1. (Currently Amended) An improved electrode assembly for use inside a battery having case with electrolyte therein, comprising:

a plurality of electrodes arranged in a stacked relationship;

said plurality of electrodes including at least ~~one~~ two positive electrodes, each said positive electrode having a positive active surface area communicating with a positive conducting edge portion;

said plurality of electrodes including at least ~~one~~ two negative electrodes, each said negative electrode having a negative active surface area communicating with a negative conducting edge portion;

each said positive conducting edge portion forming a positive current collector along substantially one entire edge of said positive electrodes;

each said negative conducting edge portion forming a negative current collector along substantially one entire edge of each of said negative electrodes;

said positive current collectors, of each of said positive electrodes, stacked adjacent to each other and in substantial contact with each other along their respective entire lengths, thereby forming a positive edge portion;

said negative current collectors, of each of said negative electrodes stacked adjacent to each other and in substantial contact with each other along their respective entire lengths, thereby forming a negative edge portion;

a porous separator disposed between said positive active surface area of each of said positive electrodes and said negative active surface area of each of said negative electrodes;

a first elongated conductor in contact with substantially the entire length of said positive ~~conducting~~ edge portion; ~~of said positive electrode~~

means for attachment of said first elongated conductor to said positive edge portion;

a second elongated conductor in contact with substantially the entire length of said negative ~~conducting~~ edge portion ~~of said negative conducting edge portion of said negative electrode;~~

means for attachment of said second elongated conductor to said negative edge portion; and

~~means to communicate electric current to a device exterior to said battery from said first elongated conductor and said second elongated conductor~~ adapted at their respective distal ends, exterior to said battery, for communication of electrical

power to an electrical device.

2. (Currently amended) The improved electrode assembly as defined in claim 1 wherein said positive surface and said negative surface overlap, said overlap defining a reaction plane; and

the sum of the distance to said positive conducting edge portions and the distance to said negative conducting edge portions, from any point on said reaction plane is substantially equal.

3. (Original) The improved electrode assembly as defined in claim 1 wherein each electrode in said plurality of electrodes is formed of electrically conductive substrate having electrolytically active material located on said electrically conductive substrate;

the area of said electrolytically active material located on said electrically conductive substrate forming said positive electrode defining said positive active surface area;

said positive conducting edge portions of said positive electrodes being the area of said electrically conductive substrate adjacent to said positive active surface area; and

the area of said electrolytically active material located on said electrically conductive substrate forming said negative electrode defining said negative active surface area; and

said negative conducting edge portionsu being the area of said electrically conductive substrate forming said negative electrode adjacent to said negative active surface area.

4. (Currently Amended) The improved electrode assembly as defined in claim 1 wherein

~~said positive conducting edge portionsu, of each of said positive electrodes are stacked adjacent to each other in substantial alignment with each other thereby forming a positive edge portion;~~

~~said negative conducting edge portionsu, of each of said negative electrodes are stacked adjacent to each other in substantial alignment with each other thereby forming a negative edge portion; and~~

said positive end portionsu being located on an opposite side of said electrode assembly from said negative edge portionsu.

5. (Canceled)

6. (Original) The improved electrode assembly as defined in claim 1 wherein said plurality of electrodes are stacked with said positive active surface area of said positive electrode offset from said negative conducting edge portion of said negative electrode and said negative active surface area of said

negative electrode are offset from said positive conductive edge portion of said positive electrode.

7. (Canceled)

8. (Currently Amended) The improved electrode assembly as defined in claim 6 wherein said positive active surface area of said at least ~~one~~ two positive electrodes is smaller than the dimensions of said negative active surface area of said at least ~~one~~ two negative electrodes.

9. (Canceled)

10. (Currently Amended) The improved electrode assembly as defined in claim 1 wherein said positive conducting edge portions and said negative conducting edge portions are positioned on adjacent sides of said electrode assembly formed by said plurality of electrodes arranged in said stacked relationship.

11. (Currently Amended) The improved electrode assembly as defined in claim 1 wherein said first elongated conductor coupled to said positive ~~conducting~~ edge portion of said positive electrodes and said second elongated conductor coupled to said negative ~~conducting~~ edge portions of said negative electrodes

respectively secure said plurality of electrodes in said stacked relationship.

12. (Cancelled)

13. (Currently Amended) The improved electrode assembly as defined in claim 1 wherein said ~~means communicate electric~~ first elongated conductor and said second elongated conductor are adapted at their respective distal ends, exterior to said battery, for communication of electrical power to an electrical device, ~~current to a device~~ exterior to said battery ~~comprises~~ through each of said first elongated conductor and second elongated conductor communicating with a respective terminal on the exterior of the battery.

14. (Cancelled)

15. (Previously Amended) The improved electrode assembly as defined in claim 1 wherein said first elongated conductor and said second elongated conductor have a bulk resistivity less than  $10e-6$  ohm-cm.

16. (Previously amended) The improved electrode assembly as defined in claim 1 wherein said first elongated conductor and said second elongated conductor are copper.

17. (Previously amended) The improved electrode assembly as defined in claim 13 wherein said first elongated conductor and said second elongated conductor are copper.

18. (Currently Amended) The improved electrode assembly as defined in claim 16 wherein said first elongaged conductor and said second elongaged conductor are ~~is~~ nickel plated.

19. (Currently Amended) The improved electrode assembly as defined in claim 17 wherein said first elongaged conductor and said second elongaged conductor are ~~is~~ nickel plated.

20. (Currently Amended) An improved electrode assembly for use in battery comprising:

a plurality of electrodes arranged in a stacked relationship;

said plurality of electrodes including at least ~~one~~ two positive electrodes, each said positive electrodes having a positive active surface area communicating with a positive conducting edge portion;

said plurality of electrodes including at least ~~one~~ two negative electrodes, each said negative electrodes having a negative active surface area communicating with a negative conducting edge portion;

each said positive conducting edge portions in contact with adjacent positive conducting edge portions along substantially their entire respective conducting edge portions thereby forming a positive current collector along substantially one entire edge of said positive electrodes when in said stacked relationship;

each said negative conducting edge portions in contact with adjacent negative conducting edge portions along substantially their entire respective conducting edge portions thereby forming a negative current collector along substantially one entire edge of each of said negative electrodes when in said stacked relationship;

a porous separator in a rolled engagement disposed between said positive active surface area of each of said positive electrodes and said negative active surface area of each of said negative electrodes; ~~and~~

a first elongated conductor in contact with substantially the entire length of said positive current collector formed by said positive conducting edge portions of said positive electrodes;

means for attachment of said first elongated conductor to said positive current collector ~~positive edge portion~~;



a second elongated conductor in contact with substantially the entire length of said negative current collector formed by said negative conducting edge portions of said ~~negative conducting edge portion of said~~ negative electrodes;

means for attachment of said second elongated conductor to said negative current collector ~~negative edge portion~~; and

means to communicate electric current to terminals exterior to said battery from said first elongated conductor and said second elongated conductor respectively.

21. (Previously Amended) An improved electrode assembly for use in battery of claim 20 wherein said plurality of electrodes are arranged in said stacked relationship and said porous separator in said rolled engagement, around a mandrel.

22. (Original) The improved electrode assembly as defined in claim 20 wherein the sum of the distance to said positive conducting edge and the distance to said negative conducting edge, from any point on said positive surface area is substantially equal; and

the sum of the distance to said positive conducting edge and said negative conducting edge, from any point on said negative surface area is substantially equal.

23. (Original) The improved electrode assembly as defined in claim 21 wherein the sum of the distance to said positive conducting edge and the distance to said negative conducting edge, from any point on said positive surface area is substantially equal; and

the sum of the distance to said positive conducting edge and said negative conducting edge, from any point on said negative surface area is substantially equal.

24. (Canceled)

25. (Previously Amended) The improved electrode assembly as defined in claim 20 wherein said conductors have a bulk resistivity less than  $10e-6$  ohm-cm.

26. (Previously amended) The improved electrode assembly as defined in claim 25 wherein said conductors are ~~is~~ copper.

27. (Currently amended) The improved electrode assembly as defined in claim 25 wherein said conductors are ~~is~~ nickel plated.

28. (Previously Amended) The improved electrode assembly as defined in claim 20 wherein said first elongated electrical conductor and said second elongated electrical conductor each have a plurality of said terminals, each of said plurality of

terminals respectively communicating from a point exterior to said case on one end with said first and second elongated conductors at opposite ends.

29. (Currently amended) The improved electrode assembly as defined in claim 1 additionally comprising means for pressured engagement of the positive conducting edge portions to each other and to said first elongated conductor extending substantially the entire length of said positive ~~conducting~~ edge portion; and

means for pressured engagement of said negative conducting edge portions to each other and to said second elongated conductor extending substantially the entire length of said negative ~~conducting~~ edge portion.

30. (Currently Amended) The improved electrode assembly as defined in claim 13 additionally comprising means for pressured engagement of the positive ~~conducting~~ edge portion to said first elongated conductor extending substantially the entire length of said positive ~~conducting~~ edge portion; and

means for pressured engagement of said negative ~~conducting~~ edge portion to said second elongated conductor extending substantially the entire length of said negative ~~conducting~~ edge portion.

31. (Original) The improved electrode assembly described in claim 1 wherein the resistance generated from the distance between the positive and negative current collectors can be reduced to satisfy any desired low level of required resistance of the electrode stack.

32. (Currently amended) The improved electrode assembly described in claim 13, wherein each of said first elongated conductor and second elongated conductors each communicate with a plurality of respective terminals on the exterior of the battery at different points along their respective lengths.

***Claim Rejections per Fan in view of Japanese  
publication under 35 USC §103***

The examiner has rejected claims 1 - 30 per Fan et al US 2003/0134203 in view of the Japanese Publication per 35 USC §103.

As noted in the telephonic interview with the Examiner, the Japanese publication, fails to teach the stacking of a plurality of two or more individual positive and negative electrodes to form an electrode assembly having a plurality of edge portions which contact each other, and the elongated conductor, along their entire respective lengths. Instead, Figures 1 & 2 of the Japan publication show a single electrode which is rolled up with an edge portion (15) attached to the single edge (14) of the one electrode (13). This is done apparently to stiffen the edge portion to contact a washer (18) which is electrically in contact with the battery can exterior which acts as the electrode.

The Japan publication as noted in the telephonic meeting lacks any teaching or suggestion to use a plurality of positive and negative electrodes, having a plurality of different edge portions, which are respectively in contact with each other along their entire individual edges to form a conducting edge in contact with an elongated conductor along its entire edge. The distal end of the conductor communicating electrical power outside the battery can. Instead, as noted, it teaches and shows a single electrode rolled to be contained in a battery can having a side acting as a flat round conductor in communication with the washer communicating with the one side edge.

Fan, the other publication cited shows a similar "button" style battery as the Japan publication as shown in figures 1-3 of Fan. It too lacks the employment of elongated conductors that respectively engage along the entire length of multiple conducting edges of multiple positive and negative electrodes forming the electrode assembly for a battery.

As such, there is not teaching in either reference for Applicant's plurality of individual positive and negative electrodes having a plurality of conducting edges which respectively engage along their entire sides with each other and with an elongated conductor which communicates electrical power from those conducting edges to the exterior of the battery. Neither is there any reason for such a combination since both publications teach the use of a button style battery using a single positive and single negative electrode rolled up inside the can and using the can itself as the conductor.

As such, Applicant's amended claims which more clearly describe the employment of multiple positive and multiple negative electrodes and multiple conducting edges engaging an elongated conductor, should be allowable.